Original Research Article

Pattern of Blood Donation practices among Students of a Nigerian University.

ABSTRACT

Background: Blood transfusion service is an indispensable component of health care. Despite the increased demand for blood, the supply of safe blood has been inadequate.

Objective: The aim of this study is to determine the pattern of blood donation practices among medical students in Abakaliki.

Methods: This was a cross-sectional study carried out at Ebonyi State University Abakaliki between October 2017 and March 2018. Stratified sampling technique was used to recruit participants from among medical students using pre-tested, semi-structured, self-administered questionnaire, to assess their pattern of blood donation practices. Data was analysed using SPSS software, version 20.

Results: One hundred and fifty eight medical students who participated in the study were made up 90 males and 68 females. The most prevalent age group was 20 to 25 years. Most of the participants (93%) were single. The most common blood group was O Rh positive, followed by A Rh positive then B Rh positive while AB Rh negative was the least. Majority of the participants have never donated blood. The minority who have ever donated blood, donated either once or twice and the donation was made for a family member or friend.

Conclusion: Participants were found to have poor pattern of blood donation practices. Misconception, fear, cultural and religious influences deter people from practicing voluntary non-remunerated blood donation. Conducting awareness and enlightenment programs regularly will help to keep them well informed and motivated to practice voluntary non-remunerated blood donation.

Key words: Blood donation, Students, Medical.

INTRODUCTION

The timely availability of safe blood and blood products is essential aspect of medical services. Blood is essential to life, circulates through the body and delivers essential substances like oxygen and nutrients to the body cells. It also transports metabolic waste

products away from the body cells. Blood transfusion aims at the safe transfer of blood components from the donor to the recipient. In-spite of the relevance of blood donation, the major challenge to the transfusion of blood is meeting the increasing demand for blood and ensuring its constant supply. Shortage of blood is due to an increase in the demand, with fewer voluntary blood donors.[1,2]

The importance of blood transfusion in medical practice cannot be overemphasized as millions of lives have been saved since the discovery of ABO blood groups. Despite advances in medical research, ideal substitute for blood is yet to be found. Therefore blood donation by humans is still the only source of blood and blood components. Since all blood components and manufactured blood products originate with blood donors, the safety of blood transfusion begins with careful selection of donors.[3] Accordingly, donors should be managed in a way that ensures high standard of care.

WHO estimates that blood donation by 1% of the population is generally the minimum needed to meet a nation's most basic requirements for blood.[4] Generally, donated blood come from either voluntary non-remunerated donors, commercial donors or family members. Family/ replacement donors are usually unaware about conditions that may make them unsuitable to donate blood. Paid donors often lead lifestyles that expose them to the risk of infections that could be transmitted through their blood and are motivated by monetary gain which make them vulnerable to exploitation.[5] An adequate and reliable supply of safe blood can be assured by a stable base of regular, voluntary, unpaid blood donors as they are motivated by altruism or social responsibility and are rewarded with personal satisfaction and self-esteem. One of the biggest challenges to blood safety particularly in Sub-Saharan Africa is accessing safe and adequate quantities of blood and

blood products.[6] Communities in Africa face several enduring challenges such as chronic blood shortages, high prevalence of Transfusion-Transmissible Infections (TTIs), lack of national blood transfusion services, problems with recruitment and retention of voluntary non-remunerated blood donors, family replacement and commercial blood donation, and inadequate use of pharmacologic and non-pharmacologic alternatives to allogeneic blood.[7] Addressing these challenges should be a central priority for most blood transfusion services, particularly in Sub-Saharan Africa, to ensure the uninterrupted supply of safe blood and blood products.[8] Unlike developed countries, significant percentage of blood donation in developing countries largely depend on family replacement and paid blood donors.[9] According to Nigeria Federal Ministry of Health survey, 25% and 75% of donated blood in public sector is from commercial and family replacement donors while the reverse is the case in private sector where 75% and 25% were commercial and family replacement donors respectively and voluntary blood donors were negligible in both sectors.[10] In our society, overdependence on family replacement and remunerated donors to meet the increasing demand for blood and blood products poses serious danger to potential recipient.[11]

Young people are the hope and future of a safe blood supply in the world as they are healthy and enthusiastic. As majority of them will be pursuing their education, schools and colleges can become a good platform for motivational activities. By virtue of operating in health institutions, medical students are expected to be aware of the scarcity of blood and blood products despite increasing demand, the consequences of blood scarcity on health services and are thus expected to donate as well as encourage voluntary blood donation among the public. The objective of this study was to determine the pattern of blood donation practices and the reasons for not donating blood among medical students.

MATERIALS AND METHODS

Study design and area

The study was a cross-sectional study carried out at Ebonyi State University, Abakaliki South Eastern Nigeria between October 2017 to March 2018.

Study population, sample size and sampling technique

The study population comprised medical students who were undergoing their clinical training. Using the Yaro Yamane formula for finite population, a minimum sample size of 169 was calculated. However, the sample size was increased by 10% giving 185 sample size to take care of attrition. The participants were selected using stratified sampling technique. The participants level of study formed the basis of each stratum. Sampling frame for the study was 304 (comprising 109, 102 and 93 students in 400, 500 and 600 levels respectively). Proportional allocation was used to select the number of students required to partake in the study from each level. At each level, simple random sampling by ballot method was used to select those who participated in the study.

Data Collection/ Data Instrument

The tool for data collection was a semi-structured self-administered questionnaire. The questionnaire consisted of two sections. Section A comprised the socio-demographic characteristics of the participants while section B comprised questions that sought to assess the practice of voluntary blood donation among the participants. The questionnaires were administered to the students who gave their consent. Questionnaires with incomplete information were excluded.

Data Analysis

Data was analysed using Statistical Package for Social Sciences (SPSS) software version 20. Descriptive statistics was used to compute mean and standard deviation for continuous data while the categorical data were expressed in frequency and percentages. Results were presented in tables and chart.

Ethical Consideration

Ethical clearance was obtained from the Research and Ethics Committee of Ebonyi State University, Abakaliki. In addition, informed written consent was obtained from each participant before being included in the study.

RESULTS

Socio-demographic Characteristics

A total of 158 medical students participated in this study. They comprised of 98 males and 60 females with a ratio of 1.6: 1. A higher proportion of the participants 128 (81%) were within the age group 20- 25years (Table 1).

Table 1: Socio-demographic Characteristics of Medical Students who Participated in the Study.

Characteristics	Frequency	Percentage
Sex		
Males	98	62
Females	60	38
Total	158	100
Age (years)		
<20	2	1.3
20 – 25	128	81
26 – 30	23	14.6
>30	5	3.2

Total	158	100
Marital status		
Married	7	4.4
Single	151	95.6
Total	158	100
Religion		
Christianity	158	100
Islam	0	0
Traditional	0	0
Others	0	0
Total	158	100

Blood Donation Practices among Medical Students.

Majority of the students have never donated blood in the past (Figure 1). Among those who have ever donated blood, most of them are not regular blood donors as majority of them, 69.6% and 19.6% have donated only once and twice respectively. Blood donation was made mainly for either a family member or a friend. Participants (35.4%) who have ever donated blood were mostly males (Table 2).

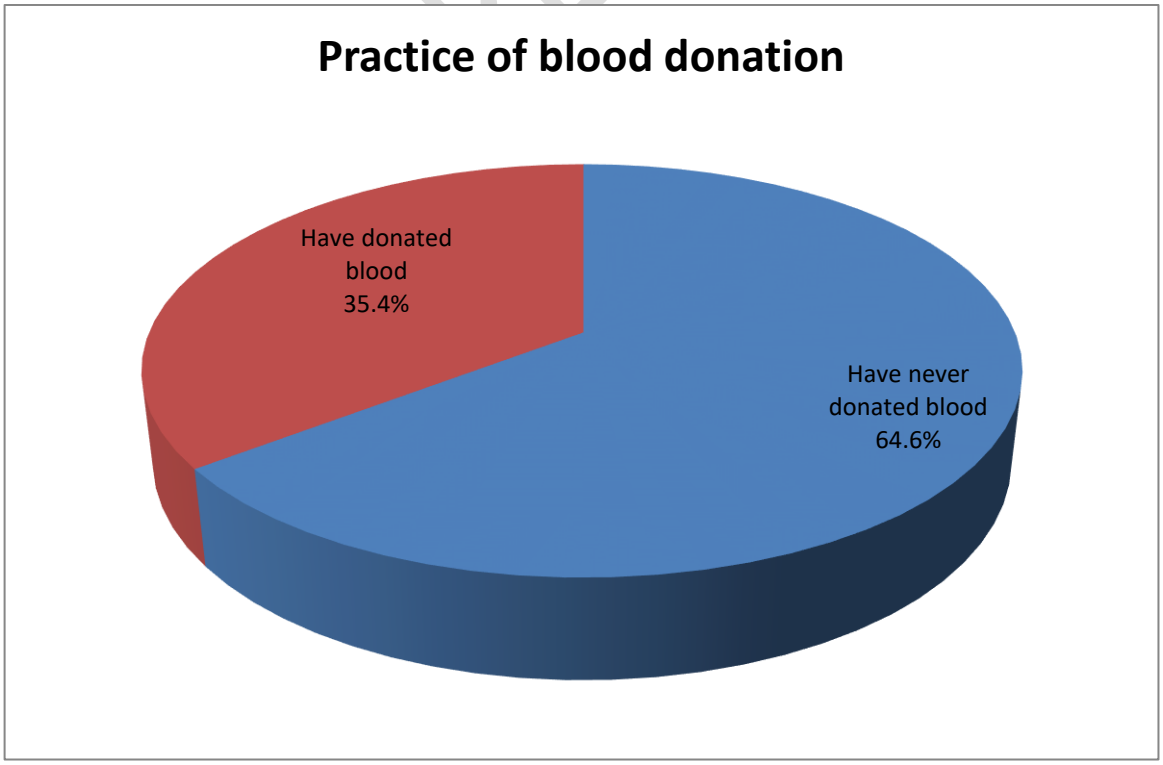

Figure 1: Medical students who have ever donated blood.

Table 2: Blood Donation Practices among Medical Students

variable	Frequency	Percentage
Ever donated blood (n = 158)		
Yes	56	35.4
No	102	64.6
Number of times donated (n = 56)		
1	39	69.6
2	11	19.6
≥3	6	10.8
Blood donation by gender (n = 56)		
Female	10	17.9
Male	46	82.1
Donated without pay (n = 56)		
Yes	49	87.5
No	7	12.5
Who blood was donated for (n = 56)		
Family member (s)/ friend(s)	41	73.2
Stranger(s)	15	26.8

Some of the reasons given for not donating blood include lack of information on blood donation and it's importance, don't have enough blood to donate, cultural/religious reasons, misuse of blood in the hospital, as shown in Table 3.

Table 3: Reasons for donating or not donating blood

Reasons for donating blood		
To save lives	147	93
As a reward for benefiting from donated blood	6	3.8
To get free medical check	3	1.9

To get money	2	1.3
Total	158	100
Reasons for not donating blood		
Lack of information on blood donation and it's importance	47	29.7
Don't have enough blood to donate	36	22.8
Fear of post-donation outcomes	15	9.5
Fear of needle	13	8.2
Cultural/religious reasons	12	7.6
Never thought of blood donation	10	6.3
Nobody asked for blood donation	8	5.1
Fear of contacting infections	7	4.4
Fear of discovering diseases	5	3.2
Misuse of blood in the hospital	3	1.9
Fear of sight of blood	2	1.3
Total	158	100

DISCUSSION

Blood transfusion is a very crucial component of patient management. It has been life-saving procedure especially in cases of medical emergency and for patients suffering from various medical conditions. Voluntary blood donors are the source of safe blood. With the level of ignorance, misconception and fear regarding blood donation, there is a need for medical students to take the lead in this noble course by practicing regular voluntary blood donation to maintain a regular blood supply.

This study revealed that the most prevalent age group among the participants was 20 to 25 years. This collaborates with previous studies which reported that most blood donors are young people.[9,12] In a developing country like ours, lack of information, poor blood donor recruitment and retention strategy and various misconceptions have resulted in a limited number of voluntary donors. This challenge can be tackled by adopting such recruitment methods that can overcome the misconceptions and also motivate the public to donate at an early age, so that they become lifelong voluntary donors. According to WHO, blood donation can be started safely from 17 years of age, so it is important that the young

generation can be motivated to do this harmless task.[13] Young persons are the most potential blood donors in every society and students constitute a huge proportion of them. These potential donors should therefore be well harnessed by sensitization and continued health education using appropriate behaviour change communication models.

This study found that blood donation practice among the participants was poor as majority of them have never donated blood in the past. This corroborates with findings of previous studies which reported poor blood donation practices among the population studied.[14,15] Kaoje et al, in a study conducted at Sokoto, Nigeria reported that only 25% of the participants had ever donated blood.[14] Similarly, a study among health care workers in Ethiopia reported that only 31.9% of the participants had ever donated blood in their life.[15] The poor blood donation practices could be a reflection of perception of the practice of blood donation in the our society.

Another interesting finding of this study is that majority of the people who have ever donated blood were males, with only a few females. This corroborates with findings of previous studies which reported minimal contribution to blood donation among females.[16] Similarly, another study also reported that female donors contribute only a few compared to male donors.[17] This is an affirmation of the WHO report that there are more male donors.[13] The reluctance to donate blood among females is understandable because females usually have a lower packed cell volume at certain times of the months due to menstrual flow. Previous studies have reported that women experience 70% more deferral from donation than men, because of higher frequencies of anaemia, issues related to pregnancy, breast feeding and adverse reactions.[18] Vasovagal attack and post donation fatigue appear to be more common in females compared to males.[19] Hence, general health of women need

to be improved by good nutrition and iron supplementation. Considering the fact more females are venturing into the medical profession, the practice of blood donation should be encouraged among females lending credence to the fact that anybody, irrespective of gender, can save lives.

Moreover, majority of those who have ever donated among the participants were first time blood donors as they have donated only once. Similar findings have been reported by previous studies.[20] This suggests that majority of the donors are not regular blood donors and may have donated blood out of need. It is important to note that after the first donation, the students could also donate again if properly motivated.

Majority of the people who have donated did that either to a family member or a friend. Previous studies have given similar report.[21,22] Studies have shown that there is scarcity of regular voluntary blood donors in our environment.[9] Many people only donate when there is a compelling need to donate for a family member or a friend. This is different from what is obtainable from the more civilized parts of the world where blood is readily available due to voluntary blood donation practiced regularly by a higher proportion of their population. Globally, it has been found that 80% of first time donors every year give up the practice of blood donation.[23] Reasons given for not donating blood among respondents who had never donated were similar to other studies.[22,24] This may imply that continuous enlightenment is needed among this studied group and indeed, among the general population to highlight the importance of blood donation, especially Voluntary Non-Remunerated Blood Donation through various channels of communication.

Some of the reasons given by the participants why people do not donate blood voluntarily include lack of information on blood donation and its importance, do not have enough blood to donate, nobody asked for blood donation, cultural and religious reasons, misuse of blood in the hospital, fear of post-donation outcomes. Our finding is similar to that of previous study which reported that the major reasons for not donating blood were concern about the sterilization of the equipment followed by unknown fear, the collection facility is far from the place, not having enough time to donate.[25] Likewise, other studies found that unknown fear of blood donation, needle prick, misuse or selling of their donated blood by the blood bank are some of the reasons for not donating blood.[27, 28] All these reasons can be overcomed by encouraging the students to donate blood and educating them about the importance of donating blood. This can be attained by organising different educational programs at that can shed light on the significance of blood donation. With proper education, these erroneous beliefs and misconceptions will be corrected as evidenced from the results of previous studies.[29] This will lead to better understanding and correct information about voluntary blood donation with improved voluntary blood donation practices. The end result will be improvement in the availability of safe blood and blood products for improved medical care services.

This study also revealed that the major reason for donating blood among the participants was to save lives. Other studies conducted in different parts of the globe also reported that the major motivation for donating blood by the participants was the intention to save lives.[21,30] Other reasons given by few of the participants for donating blood include as a reward for benefiting from donated blood, to have free medical check and to get money. Even though the practice of blood donation has been adjudged to be safe, some people still

have many wrong ideas about it as they want to donate due to their personal interest and not voluntarily out of altruism. Such donors have been reported not to be safe as they can conceal important medical information in a bid to achieve their goal irrespective of the consequences.[5]

Conclusion

The practice of regular voluntary blood donation among medical students was poor as most of them have never donated blood in the past. Participants who have ever donated blood are not regular blood donors as majority have donated only once. Blood donation in most cases were made for either a friend or a family member. Most of the donors were males as females were more reluctant to donate blood. Some of the reasons given by most of them for donating blood include to save life. Some were motivated because they want to give rewards for having benefited from donated blood in the past, others to get free medical check while a few were motivated because they want to get money. Some of the reasons given by the participants for not donating blood include lack of information on blood donation and it's importance, don't have enough blood to donate, fear of post-donation outcomes, fear of needle, cultural/religious reasons, never thought of blood donation, nobody asked for blood donation, fear of contacting infections, fear of discovering diseases, misuse of blood in the hospital, fear of sight of blood, among others.

There should be a regularly scheduled awareness creation and enlightenment campaigns to allay the fears and misconception related to blood donation. Information on the benefits of regular voluntary blood donation should be emphasized on a continuous basis to correct the impression that blood donation is a harmful practice.

Competing Interest

The authors declare that no competing interests exist.

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